NOAA
R 104

NOAA SHIP
RONALD H BROWN
FIRE DETECTION SYSTEM

REVISIONS

No.	Date:	By	DESCRIPTION
0	1/25/19	JBW	AS-BUILT

SYSTEM-LAYOUT
OF THE
FIRE-ALARM
SYSTEM
FOR
NOAA
RONALD.H.BROWN

Hiller Systems
FIRE DETECTION & SUPPRESSION
DESIGNERS & INSTALLERS
1242 EXECUTIVE BLVD.
CHESAPEAKE, VIRGINIA 23320
TEL: (757)-549-9123
FAX: (757)-549-1083
DCJS#11-8865

DESIGNED BY: JBW	DRAWN BY: JBW
CHECKED BY: MDM	REVISION No.: 0
DATE OF ORIGINAL ISSUE: AUGUST 1, 2017	
DWG No. VI4098-1	SCALE: AS NOTED

SHEET NUMBER

1

OF 11 TOTAL SHEETS

JOB No. 4098	JOB CODE: VI

FIRE PROTECTION LEGEND:

FACP	FIRE ALARM/MASS NOTIFICATION CONTROL PANEL
ANN	LOCAL ANNUNCIATOR
CD	WALL MOUNTED HRN STROBE/STROBE CD = CANDELA RATING
CD	WALL MOUNTED STROBE CD = CANDELA RATING)
	WALL MOUNTED MOTOR BELL
P	MANUAL PULL STATION
	AREA SMOKE DETECTOR
MM	MONITOR MODULE
WP	WEATHER PROOF
EOL	END OF LINE RESISTOR

DRAWING NOTES

1) DO NOT BRING ANY CONDUIT INTO THE BOTTOM OF ANY PANEL ENCLOSURE. THIS SPACE IS TO BE RESERVED FOR BATTERIES.
2) ALL SLC WIRING IS CLASS "A" (NON-REDUNDANT) T-TAPPING IS ALLOWED ON THE SLC CIRCUIT.
3) ALL NAC WIRING IS CLASS "A" (NON-REDUNDANT) T-TAPPING IS NOT ALLOWED ON THE NAC CIRCUIT FOR ANY REASON.
4) ALL WIRING SHOULD BE TESTED FOR OPENS, SHORTS, AND AND GROUNDS AND DOCUMENTED BY OTHERS PRIOR TO CONNECTING ANY EQUIPMENT.
5) MOUNT FIRE ALARM CONTROL PANEL AT 72" ABOVE THE FINISHED FLOOR, FROM THE TOP OF THE PANEL.
6) MOUNT AUDIO/VISUAL DEVICES 80"-96" ABOVE THE FINISHED FLOOR OR 6" BELOW CEILING WHICHEVER IS LOWER.
7) ALL WIRING SHOWN ARE HOW THE WIRES SHALL BE RAN. ANY DEVIATIONS FROM THE FLOOR PLAN MUST BE SUBMITTED AND APPROVED BY AHJ IN ADVANCE OF CHANGES BE MADE.
8) ALL WIRING SHALL BE IN ACCORDANCE WITH THE NFPA 70 & NFPA 72.

SEQUENCE OF OPERATION

A) NORMAL - STANDBY OPERATION
1. THE GREEN POWER INDICATOR IS LIT ON THE MAIN FIRE CONTROL PANEL.
2. ALL ALARM (RED) AND TROUBLE (YELLOW) INDICATORS SHALL BE OFF.
3. THE MESSAGE ON THE LIQUID CRYSTAL DISPLAY (LCD) SHALL INDICATE "SYSTEM NORMAL."

B) ALARM CONDITIONS:
1. ACTIVATION OF ANY ALARM CAUSING DEVICE THE SYSTEM SHALL:
A) ALARM REPORTING DEVICE(S) DISPLAYED ON THE FACP LCD.
B) ALARM AND AUDIBLE RED LED TO LIGHT ON THE FACP.
C) FACP BUZZER TO SOUND.
D) ALARM CONDITION TRANSFERRED TO MONITOR STATION.
E) LOG THE ALARM CONDITION INTO THE SYSTEM HISTORY BUFFER.

C) TROUBLE CONDITIONS:
1. UPON RECEIPT OF ANY TROUBLE SIGNAL FROM ANY TROUBLE CAUSING DEVICE, THE SYSTEM SHALL:
A) TROUBLE CONDITION DISPLAYED ON THE FACP LCD.
B) THE TROUBLE LED (YELLOW) TO LIGHT ON THE FACP
C) FACP BUZZER TO SOUND.
D) LOG THE TROUBLE CONDITION INTO THE SYSTEM HISTORY BUFFER
E) TRANSMIT SIGNAL TO MONITORING STATION

D) SUPERVISORY CONDITION:
1. UPON RECEIPT OF A SUPERVISORY SIGNAL FROM ANY SUPERVISORY INPUT, THE SYSTEM SHALL:
A) SUPERVISORY CONDITION DISPLAYED ON THE FACP LCD.
B) SUPERVISORY LED (YELLOW) TO LIGHT ON THE FACP
C) FACP BUZZER TO SOUND .
D) LOG THE SUPERVISORY CONDITION INTO THE SYSTEM HISTORY BUFFER
E) TRANSMIT SIGNAL TO MONITORING STATION

E) SYSTEM RESET:
A) ACTIVATION OF THE RESET BUTTON SHALL CAUSE THE OUTPUTS OF ALL DEVICES TO RETURN TO THEIR NORMAL CONDITIONS. IF ANY CONDITION STILL EXISTS, OR REOCCURS, THE SYSTEM SHALL REVERT TO ITS PREDETERMINED SEQUENCE OF OPERATION.
B) UPON ACTIVATION OF A SUCCESSFUL SYSTEM RESET, THE SYSTEM SHALL EXTINGUISH ALL ALARMS, TROUBLE AND SUPERVISORY SIGNALS, AND MONITOR DEVICES UNDER NORMAL CONDITIONS.
C) LOG THE ALARM, TROUBLE, SUPERVISORY, OR MONITOR RESTORATION IN THE SYSTEM HISTORY BUFFER.

F) PRIMARY POWER LOSS:
1. UPON LOSS OF PRIMARY POWER TO THE CONTROL PANEL, THE SYSTEM SHALL:
A. CAUSE THE GREEN "POWER" LED ON THE FACP TO FLASH.
B. CAUSE A TROUBLE CONDITION AS OUTLINED IN ITEM "C" (TROUBLE IN).
C. TRANSFER THE POWER DRAW TO THE BACK UP BATTERIES.

SEQUENCE OF OPERATIONS FOR FIRE ALARM DEVICES

SYSTEM OUTPUTS

SYSTEM DEVICE OR INPUT	CONTROL UNIT(S) ANNUNCIATION							NOTIFICATION				CONTROL SAFETY FUNCTIONS					
	ACTIVATE ALARM INDICATOR AND AUDIBLE	DISPLAY ALARM DEVICE AND LOCATION ON FACP	ACTIVATE TROUBLE INDICATOR AND AUDIBLE	DISPLAY TROUBLE CONDITION/ LOCATION ON FACP	ACTIVATE SUPERVISORY INDICATOR AND AUDIBLE	DISPLAY SUPERVISORY CONDITION/ LOCATION ON FACP		TRANSMIT ALARM SIGNAL TO CENTRAL MONITORING STATION	TRANSMIT TROUBLE SIGNAL TO CENTRAL MONITORING STATION	TRANSMIT SUPERVISORY SIGNAL TO CENTRAL MONITORING STATION	ACTUATE NOTIFICATION DEVICES	SILENCE PANEL AND BUILDING NOTIFICATION APPLIANCES	SYSTEM RETURNS TO NORMAL - AUDIBLE AND VISUAL STOP				
MANUAL STATION	●	●						●			●						
SMOKE DETECTOR	●	●						●			●						
HEAT DETECTOR	●	●						●			●						
FIRE ALARM AC POWER FAILURE			●	●					●								
FIRE ALARM SYSTEM LOW BATTERY			●	●					●								
SYSTEM SILENCE SWITCH												●					
SYSTEM RESET SWITCH													●				
OPEN CIRCUIT			●	●					●								
GROUND FAULT			●	●					●								
CIRCUIT SHORT			●	●					●								

FIRE ALARM SYSTEM BILL OF MATERIALS

NO.	QUANTITY	PART NO.	DESCRIPTION	MANUFACTURER
1	1	CPU2-640	MAIN BOARD	NOTIFIER
2	1	KDM-R2	LCD DISPLAY	NOTIFIER
3	1	SBB-B4	CABINET	NOTIFIER
4	1	DR-B4	DOOR	NOTIFIER
5	1	DP-DISP2	DRESS PANEL	NOTIFIER
6	1	BP2-4	BATTERY PLATE	NOTIFIER
7	2	BMP-1	BLANK MODULE	NOTIFIER
8	1	DP-1B	DRESS PANEL	NOTIFIER
9	1	CAB-BM	MARINE CABINET KIT	NOTIFIER
10	1	SIESKIT-CAB	SIESMIC KIT	NOTIFIER
11	1	NOT-FILTER-KIT1	FILTER KIT	NOTIFIER
12	1	LEM-320	SLC LOOP EXPANDER MODULE	NOTIFIER
13	1	PL-BM	MOUNTING PLATE	NOTIFIER
14	1	BB-XP	CABINET	NOTIFIER
15	1	FDU-80	REMOTE ANNUNCIATOR	NOTIFIER
16	1	SBB-3	ANNUNCIATOR BACK BOX	NOTIFIER
17	127	FSP-851	SMOKE DETECTOR	NOTIFIER
18	12	FST-851H	HEAT DETECTOR HIGH	NOTIFIER
19	14	B210LPBP	DETECTOR BASE BULK PACK (10EA)	NOTIFIER
20	9	B210LP	DETECTOR BASE	NOTIFIER
21	9	FST-851	HEAT DETECTOR	NOTIFIER
22	32	NBG-12LX	MANUAL STATION	NOTIFIER
23	32	SB-10	MANUAL STATION BACK BOX	NOTIFIER
24	4	FMM-101	MINI MONITOR MODULE	NOTIFIER
25	7	ISO-X	ISOLATION MODULE	NOTIFIER
26	1	HSR	HORN STROBE WALL MOUNT RED	WHEELOCK
27	6	LSTW	LED STROBE WALL MOUNT WHITE	WHEELOCK
28	15	MB-G6-24-R	MOTOR BELL 6"	WHEELOCK
29	3	MB-G10-24-R	MOTOR BELL 10"	WHEELOCK
30	25	WBB-R	WEATHERPROOF BACK BOX RED	WHEELOCK
31	2	PS-12260	12VDC 26AH BATTERY	POWER SONIC
32	6000	LSDSGU-3	MARINE CABLE	SEACOAST
33	700	LSDSGU-4	MARINE CABLE	SEACOAST

FIRE ALARM SYSTEM SPARE PARTS BILL OF MATERIALS

NO.	QUANTITY	PART NO.	DESCRIPTION	MANUFACTURER
1	1	CPU2-640	MAIN BOARD	NOTIFIER
2	1	KDM-R2	LCD DISPLAY	NOTIFIER
3	1	LEM-320	SLC LOOP EXPANDER MODULE	NOTIFIER
4	1	FDU-80	REMOTE ANNUNCIATOR	NOTIFIER
5	12	FSP-851	SMOKE DETECTOR	NOTIFIER
6	1	FST-851H	HEAT DETECTOR HIGH	NOTIFIER
7	1	B210LPBP	DETECTOR BASE BULK PACK (10EA)	NOTIFIER
8	5	B210LP	DETECTOR BASE	NOTIFIER
9	1	FST-851	HEAT DETECTOR	NOTIFIER
10	3	NBG-12LX	MANUAL STATION	NOTIFIER
11	3	SB-10	MANUAL STATION BACK BOX	NOTIFIER
12	1	FMM-101	MINI MONITOR MODULE	NOTIFIER
13	1	ISO-X	ISOLATION MODULE	NOTIFIER

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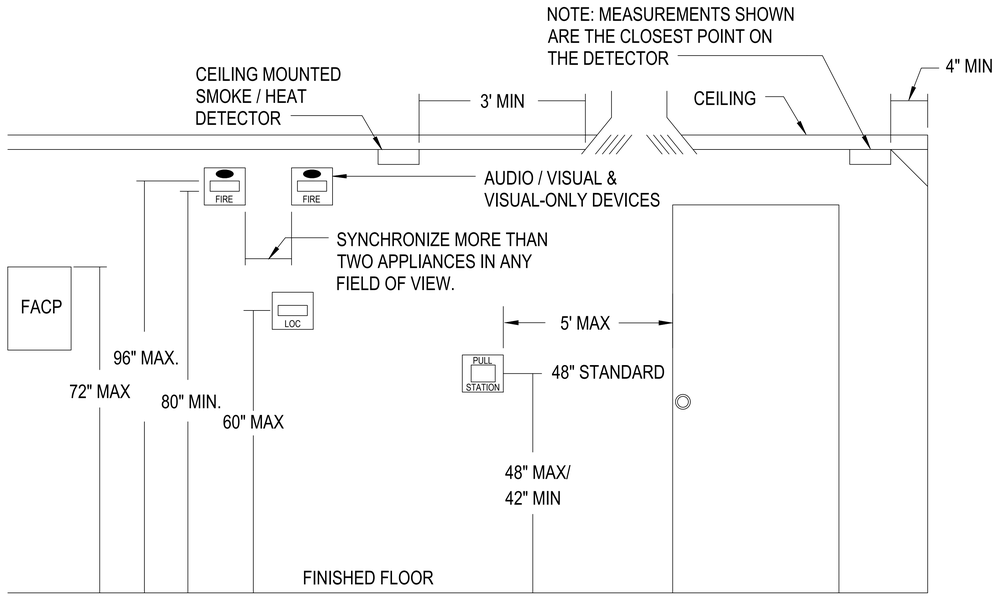
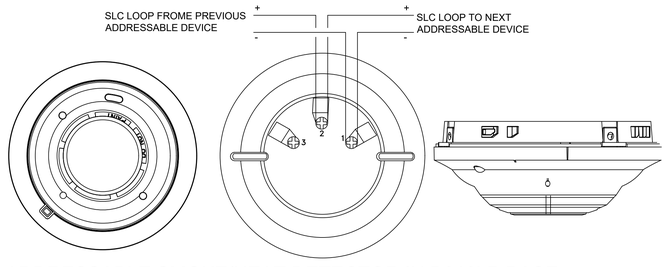
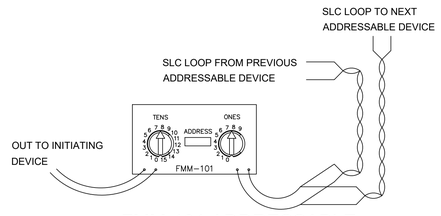


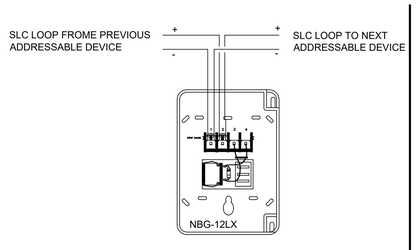
TYPICAL DEVICE LAYOUT



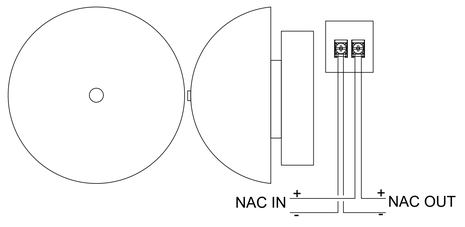
ADDRESSABLE SMOKE/HEAT DETECTOR IN B210LP BASE



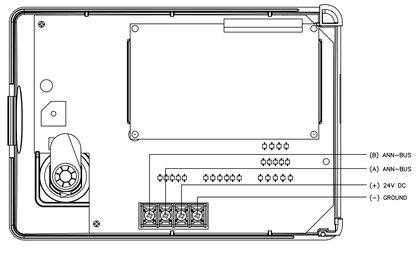
FMM-101 ADDRESSABLE
MINI MONITOR MODULE



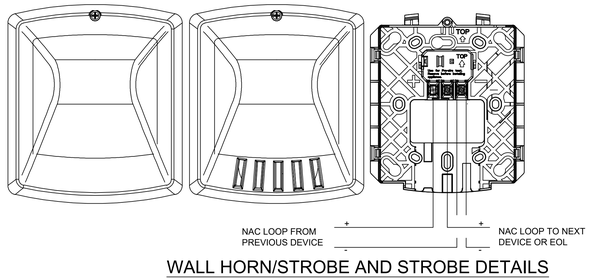
NBG-12LX ADDRESSABLE
MANUAL PULL STATION



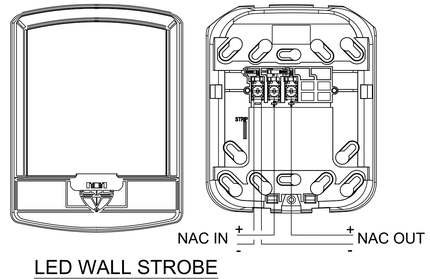
MOTOR BELL



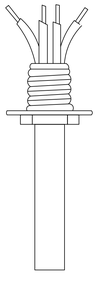
FDU-80 ANNUNCIATOR



WALL HORN/STROBE AND STROBE DETAILS



LED WALL STROBE



302-ET-XXX HEAT DETECTOR

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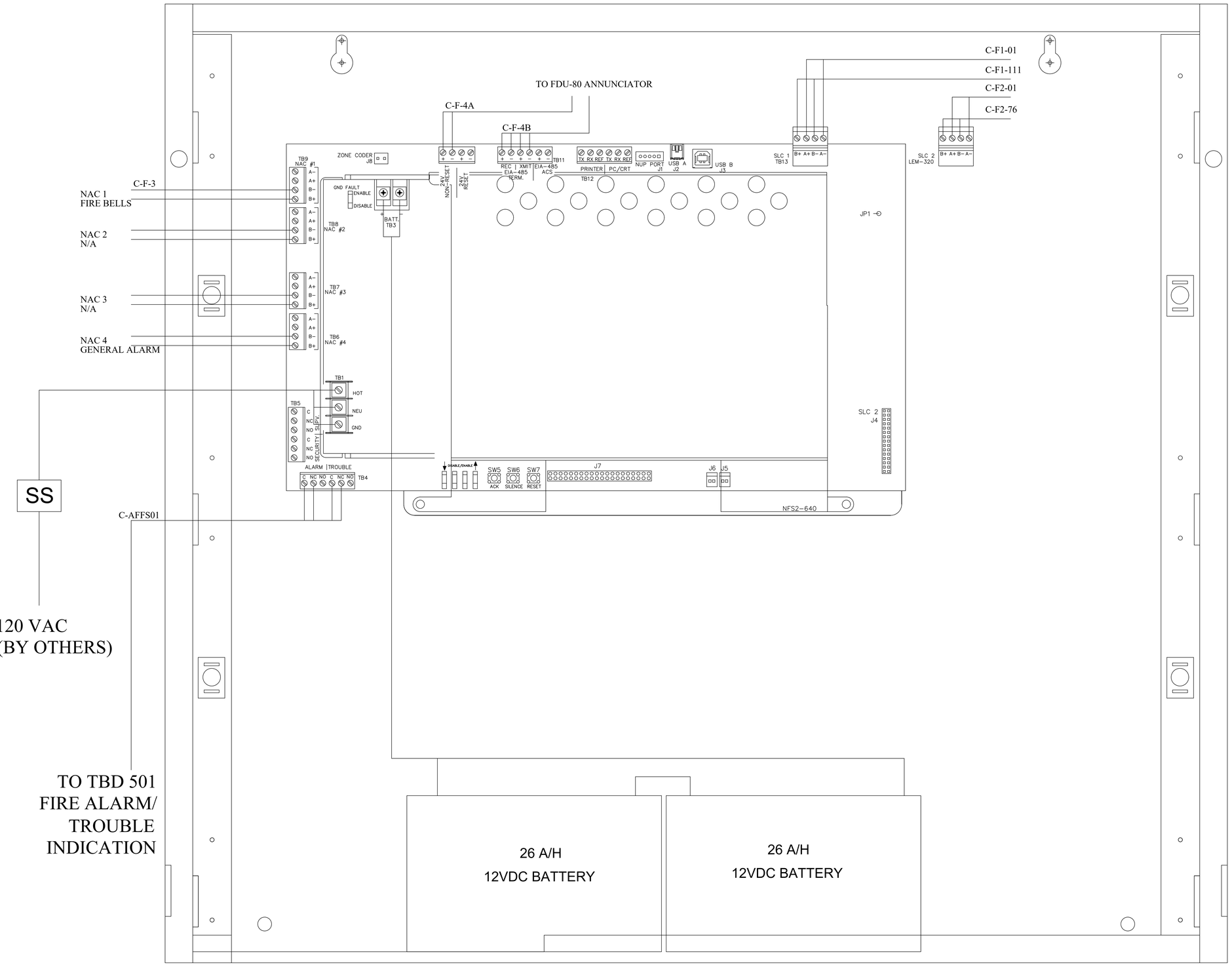

FIRE ALARM PANEL WIRING

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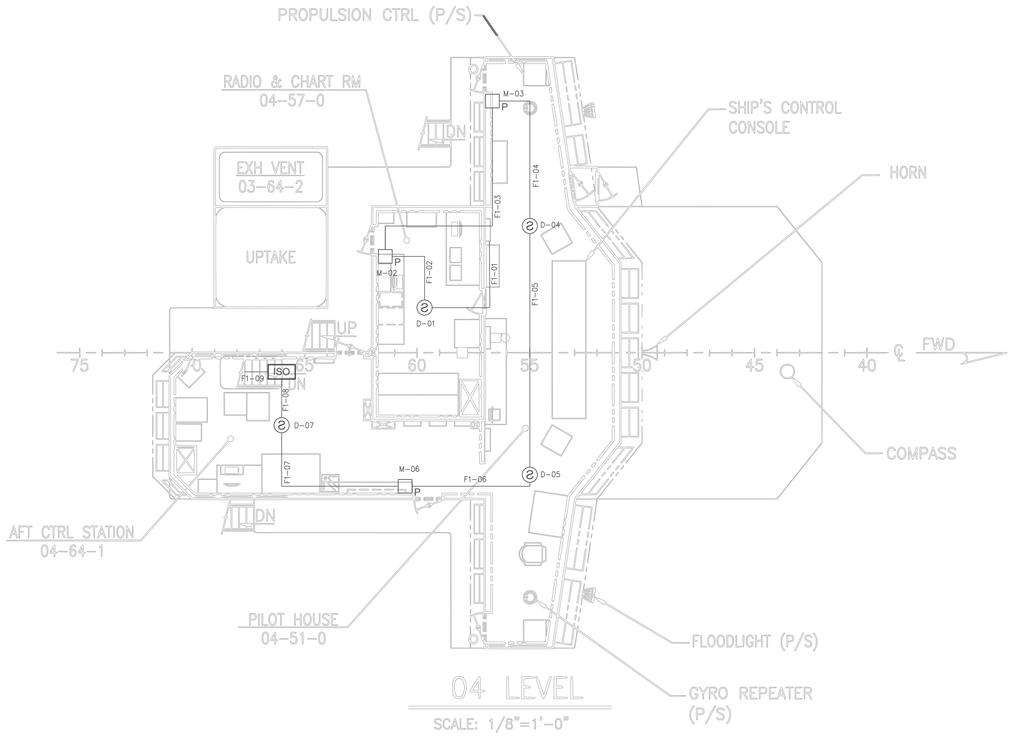
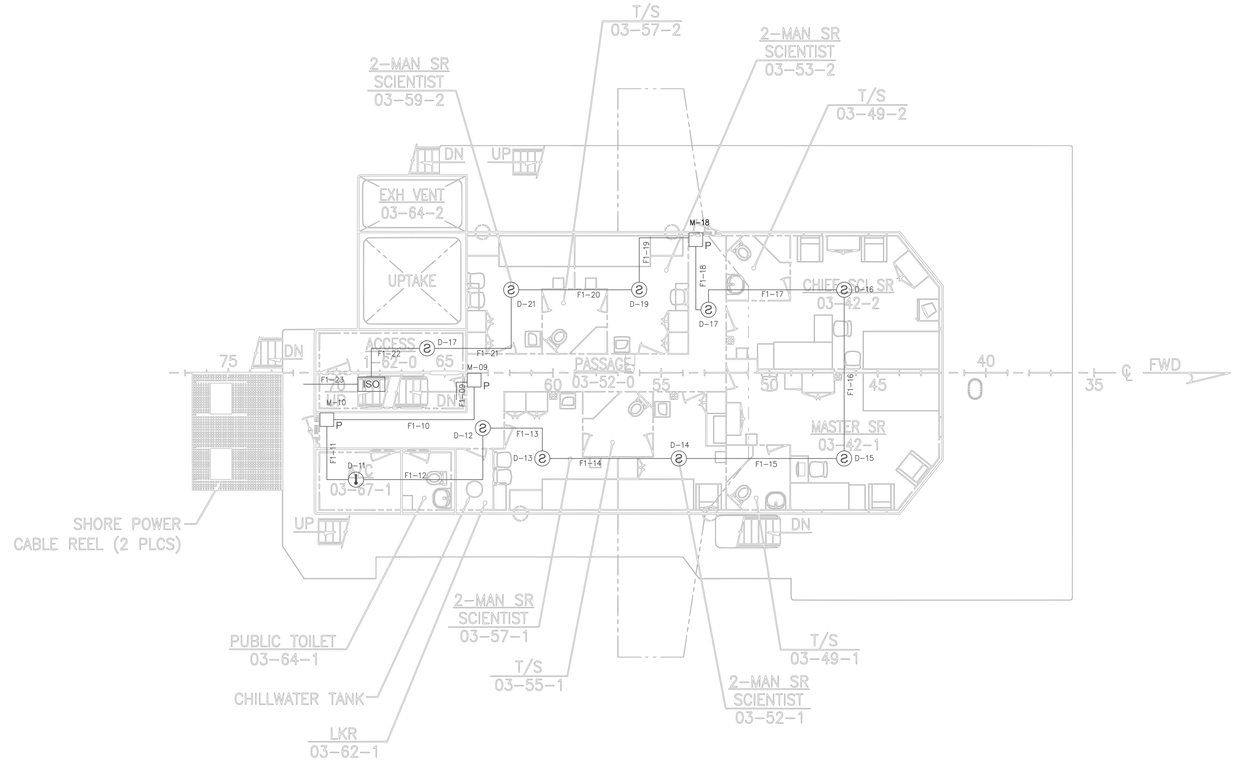


04 LEVEL

SCALE: 1/8"=1'-0"



03 LEVEL

SCALE: 1/8"=1'-0"

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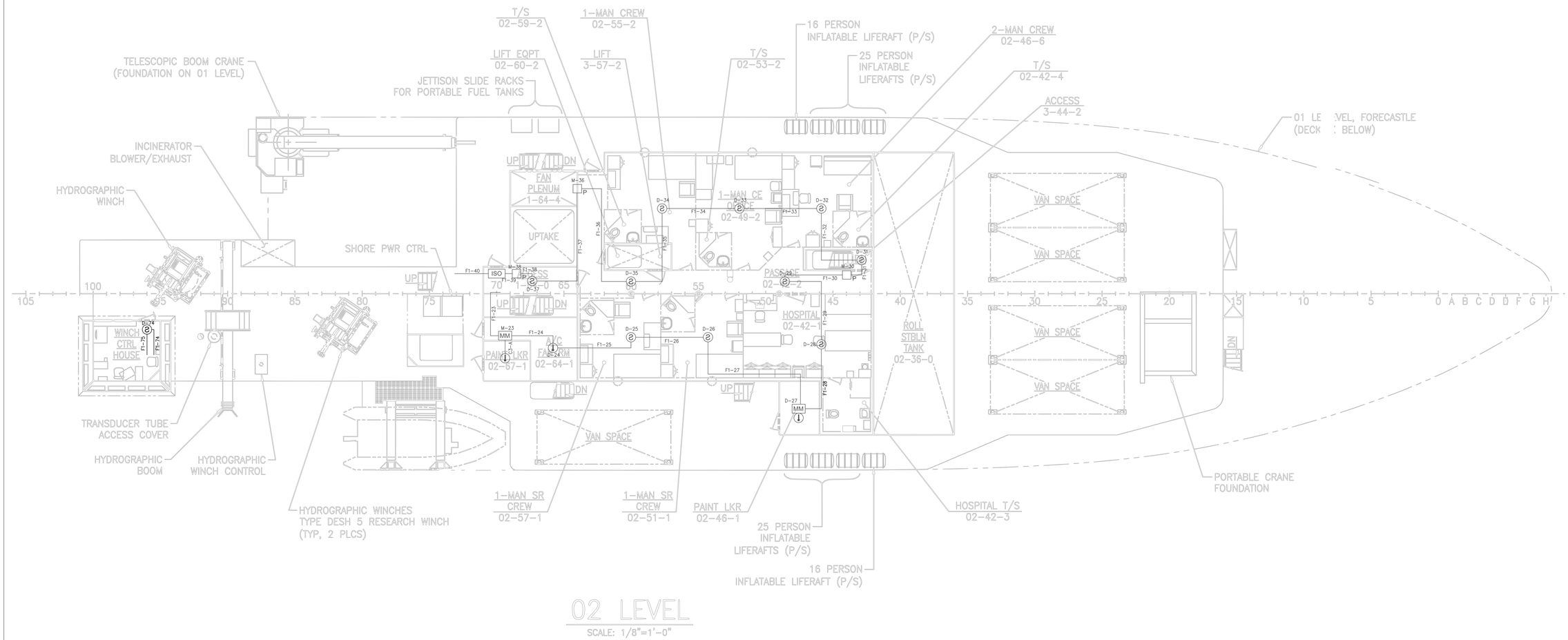

02 LEVEL

SCALE: 1/8"=1'-0"

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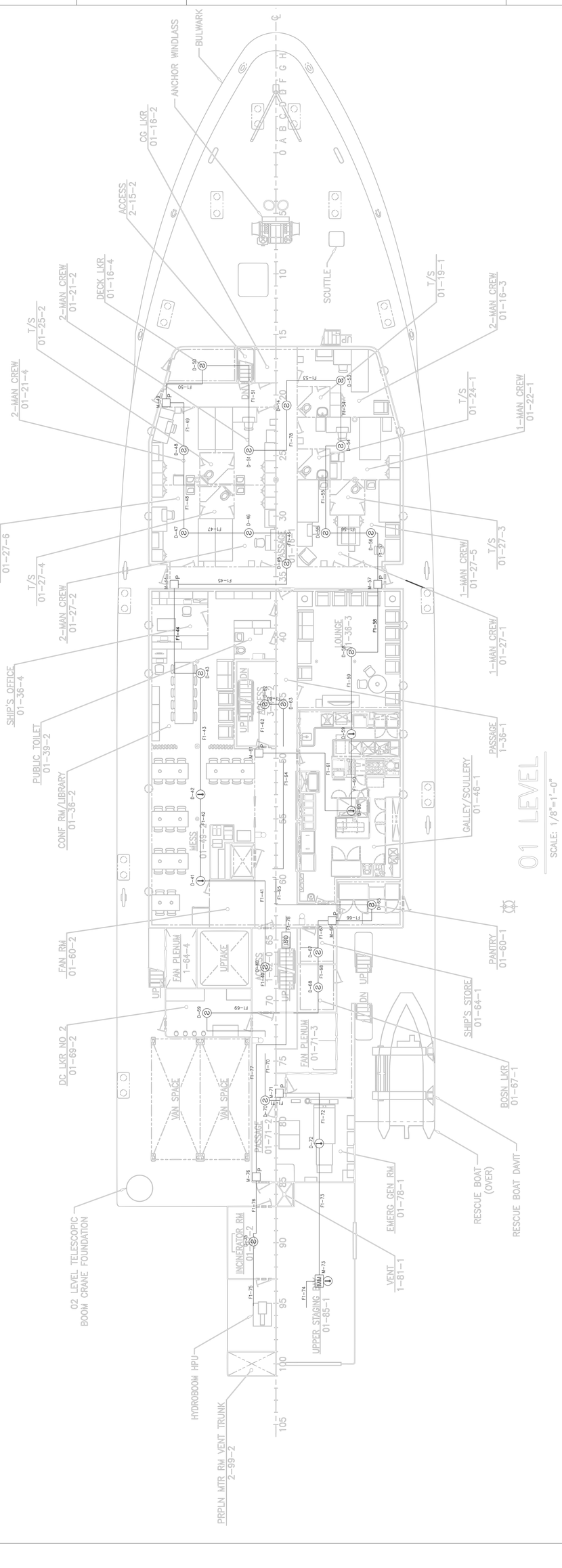

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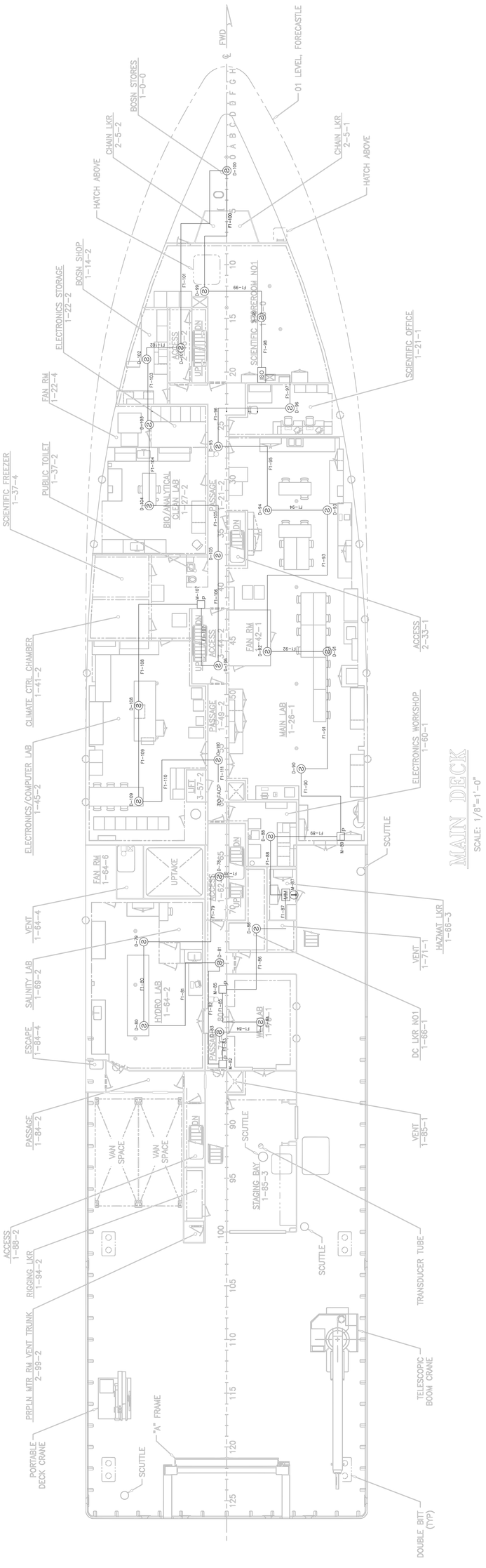

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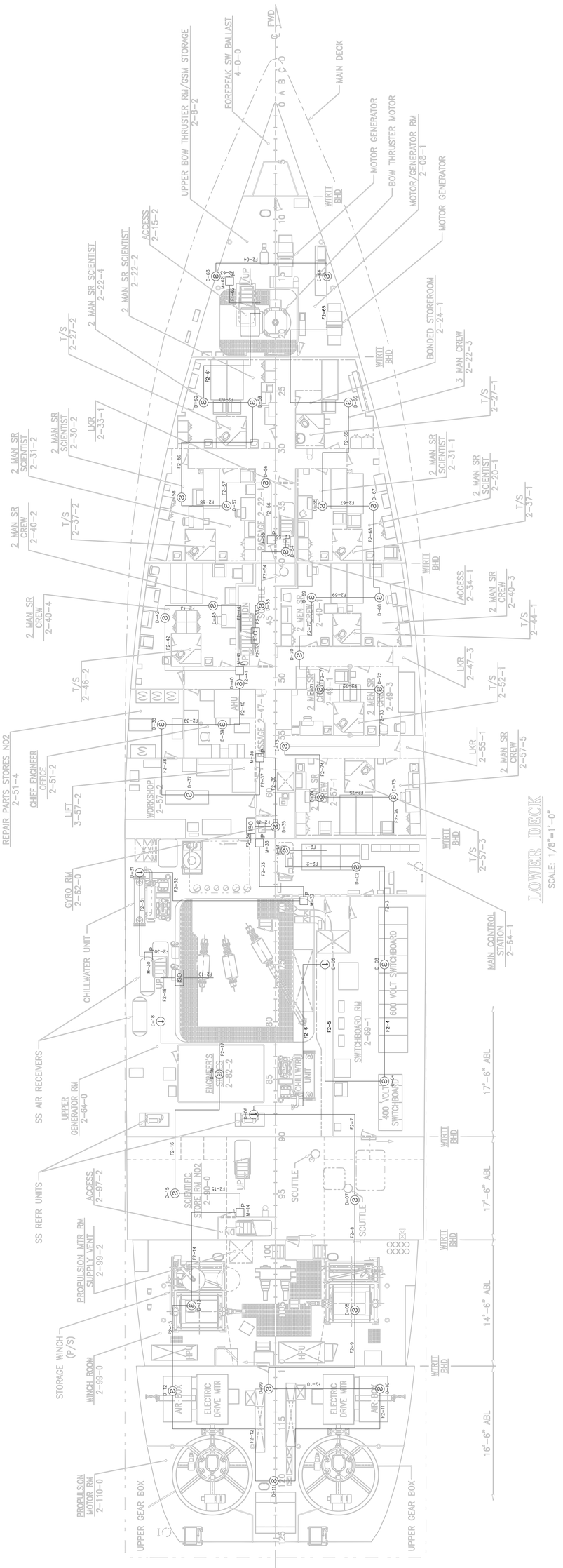

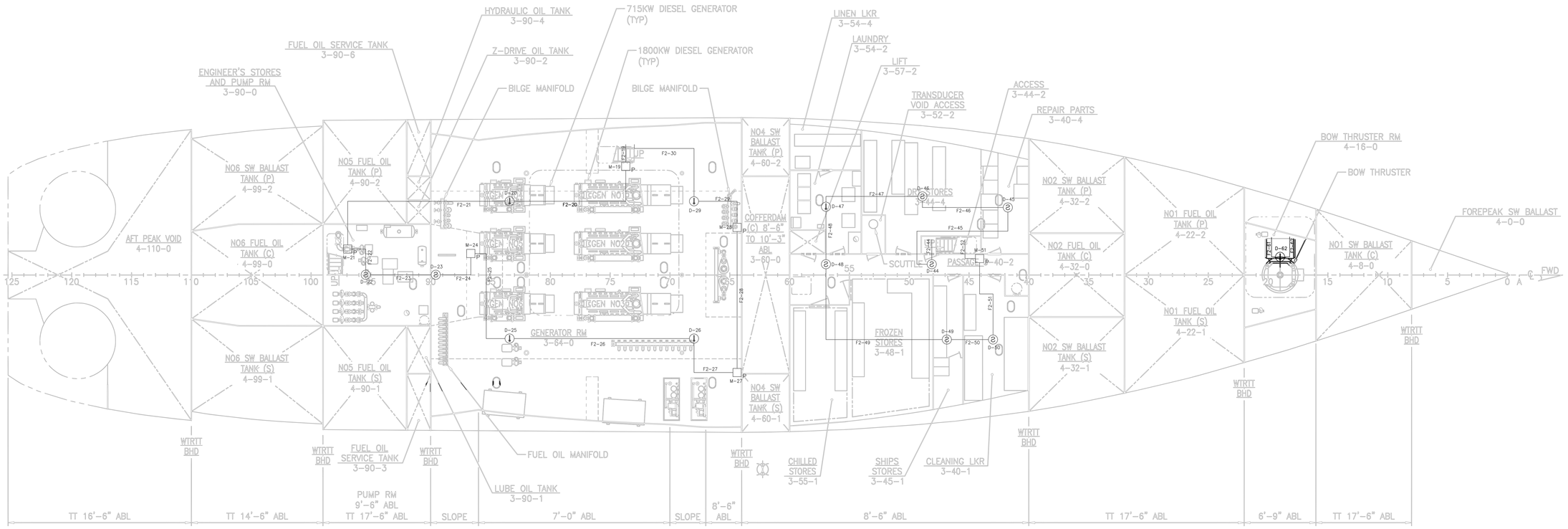

HOLD & TANK TOP PLAN

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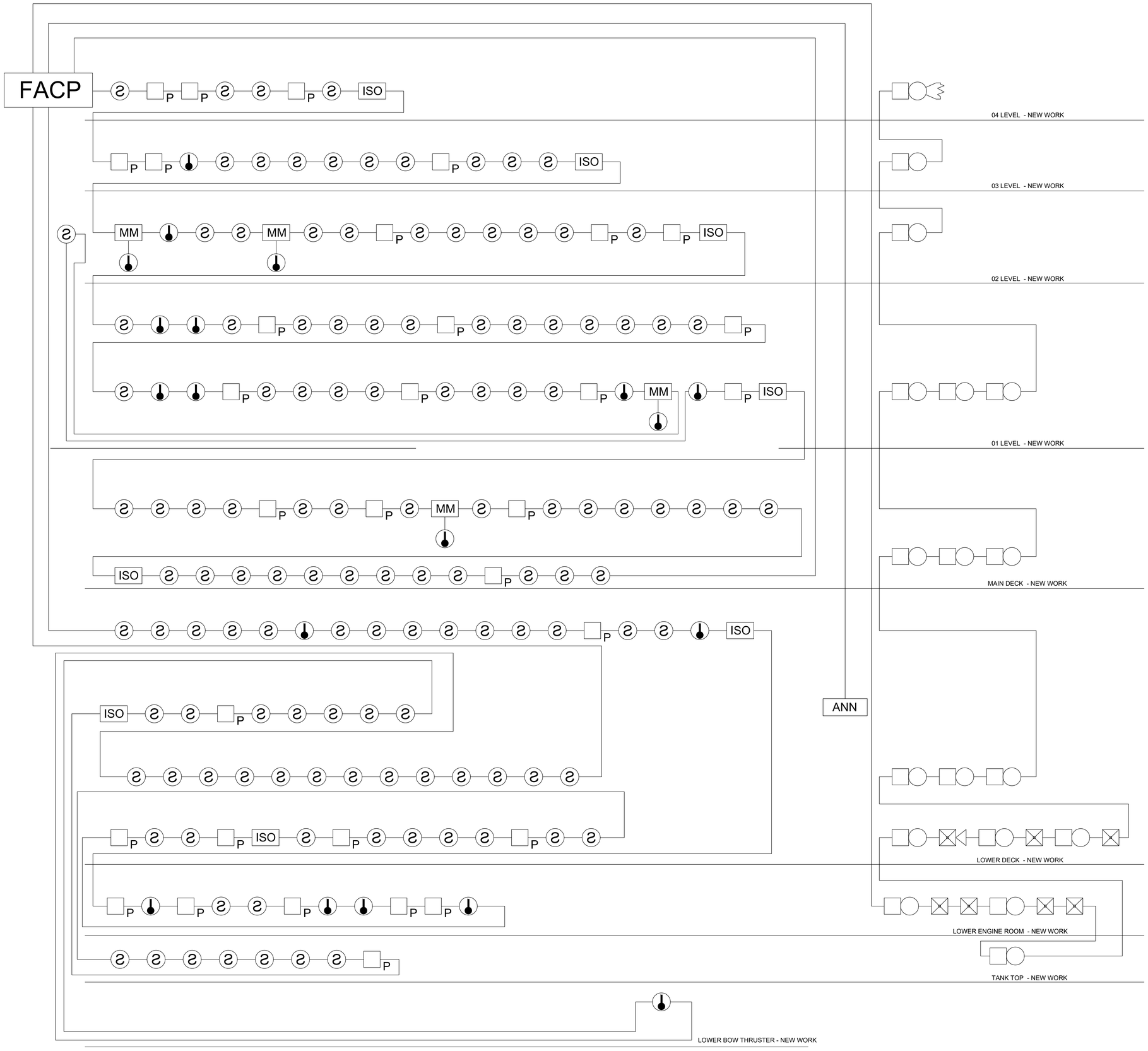

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11

OF 1 TOTAL SHEETS

JOB No. 4098	JOB CODE: VI